

# METHOD AND APPARATUS OF REDUCING ARTIFACTS IN PHASE-CYCLED STEADY-STATE FREE PRECESSION IMAGING

## Abstract

A method and apparatus of imaging multiple volumes of the anatomy of interest using a phase-cycled SSFP pulse sequence and a reverse elliptic centric view ordering to sample a first volume and an elliptic centric view ordering to sample a second volume is disclosed. Dummy acquisitions are played out between imaging of the first and second volumes, and the time to play out the dummy acquisitions is used to change the phase-cycling scheme of the RF pulses of the SSFP pulse sequence. Oscillations in signal are reduced as the spins in the anatomy of interest are brought to a new steady-state by gradually ramping the RF pulse phase increment for acquisition from the first volume to the RF pulse phase increment for acquisition from the second volume. The present invention is effective for reducing transient oscillations in MR signals from resonance and off-resonance spins, thus

enabling the use of this technique for the reduction of motion artifacts in phase-cycled SSFP.